Authors' objectives
The authors aimed to assess the most effective post-operative surveillance strategy for detecting recurrent colon and rectal cancer.

Searching
MEDLINE was searched to July 1998; the search terms used were listed in the report. The authors identified additional studies from another search undertaken for the American Society of Clinical Oncology, from the bibliographies of selected papers, and by approaching experts in the field and searching additional databases (no further details provided).

Study selection

Study designs of evaluations included in the review
Prospective and retrospective studies were eligible for inclusion. Randomised trials were given more weight, but data from non-randomised trials, case series and surveys were also included.

Specific interventions included in the review
Studies of any monitoring strategy to detect people with asymptomatic metastatic disease following surgery for colon or rectal cancer were eligible for inclusion in the review. The interventions included in the review were colonoscopy, rigid and flexible sigmoidoscopy, barium enema, computed tomography, protoscopy, chest X-ray, regular physical examination, complete blood count, liver function tests, pelvic imaging, faecal occult blood tests and carcinoembryonic antigen testing.

Reference standard test against which the new test was compared
The review did not include any diagnostic accuracy studies that compared the performance of the index test with a reference standard of diagnosis.

Participants included in the review
Studies of people who underwent surgery for sporadic cases of colon or rectal cancer and were symptom free at study entry were eligible for inclusion. Where possible, the authors considered colon and rectal cancers separately. People with hereditary cancers were excluded.

Outcomes assessed in the review
Studies were eligible for inclusion if they included data on overall and disease-free survival, quality of life, toxicity, or cost-effectiveness.

How were decisions on the relevance of primary studies made?
An expert panel of clinicians, researchers, economists and patient representatives was involved in selecting papers for inclusion in the review.

Assessment of study quality
The authors used a rating scale to rank the quality of the studies identified. The scale assessed study type, power and level of control. An expert panel was involved in assessing the validity of the included studies. The authors did not provide full details of the number of people involved: they stated that three experts in gastroenterology, surgical oncology and health services research reviewed the guidelines.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. Data were extracted on the study type, level of evidence, types of screening test and main outcomes.

Methods of synthesis
How were the studies combined?
The authors presented a narrative synthesis of the findings. They stated that randomised trials were given more weight when interpreting the results, but did not provide further details.

How were differences between studies investigated?
The authors did not describe how any differences between the studies were assessed.

Results of the review
The authors did not state the overall number of studies and participants included in the review. Details of at least four randomised trials, a quantitative review of non-randomised trials, and numerous case series were provided.

The authors found evidence that in cases where resection of liver metastases would be indicated, serum carcinoembryonic antigen tests should be performed every 2 to 3 months for at least 2 years in people with stage 2 or 3 disease. They found evidence that patients should undergo colonoscopy every 3 to 5 years to detect new cancers. In people with rectal cancer who have not received pelvic radiation, there was evidence to support periodic direct imaging of the rectum. Flexible proctosigmoidoscopy is not recommended for people who receive pelvic radiation.

The expert review panel recommended physical examination every 3 to 6 months for 3 years after surgery, and annually thereafter. There was little evidence that regular monitoring of liver function, computed tomography, complete blood cell count, annual chest X-ray and periodic faecal occult blood tests help to detect metastases or improve survival.

Authors’ conclusions
Carcinoembryonic antigen testing, colonoscopy and flexible proctosigmoidoscopy are effective for detecting recurrent colorectal cancer in asymptomatic people. The authors recommended frequent physical examinations, although no evidence was found to support this. There was insufficient evidence to recommend routine liver function tests, complete blood cell counts, faecal occult blood tests, chest X-rays, or computed tomography.

CRD commentary
This review addressed a broad research question. The authors did not describe the methods used to select the papers, assess validity, or extract the data in any detail. It was unclear how many relevant papers were identified and how many participants were involved; this makes it difficult to assess the quality of the review and the papers included in it.

It is possible that some relevant studies were omitted. The authors provided details of their search of one database. They stated that other databases were searched, but did not elaborate further. Non-English language studies were excluded, but it was unclear whether unpublished literature were also excluded. Although a checklist for assessing validity was used, it was unclear how different levels of evidence were weighted when drawing the conclusions. Much of the evidence was of poor quality. The authors did not discuss possible sources of bias or heterogeneity.

The narrative synthesis was appropriate given the wide range of tests examined and the presumed heterogeneity of the data, but the authors did not always base their recommendations on the evidence. For example, in the case of physical examinations, the authors stated that there was no empirical evidence to support their recommendation. It is difficult to assess whether the authors’ conclusions are valid due to the inconsistent presentation of the data and incomplete methodological details.

Implications of the review for practice and research
Practice: The authors concluded that carcinoembryonic antigen testing, colonoscopy, flexible proctosigmoidoscopy and...
frequent physical examinations should be used routinely to screen for recurrent colorectal cancer. Liver function tests, complete blood cell counts, faecal occult blood tests, chest X-rays and computed tomography are not indicated for routine or frequent administration.

Research: The authors stated that further trials are needed to help assess optimal tests for detecting early asymptomatic metastases in colorectal cancer.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.